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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/054,429	01/22/2002	Ekambar R. Kandimalla	47508-580 (HYZ-027CIP)	7279
23483	7590	02/07/2006	EXAMINER	
WILMER CUTLER PICKERING HALE AND DORR LLP			EPPS FORD, JANET L	
60 STATE STREET			ART UNIT	
BOSTON, MA 02109			PAPER NUMBER	

1633

DATE MAILED: 02/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/054,429

Applicant(s)

KANDIMALLA ET AL.

Examiner

Janet L. Epps-Ford

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 November 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-3 and 5-20 is/are pending in the application.
- 4a) Of the above claim(s) 6,7,14 and 15 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3,5,8-13 and 16-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

1. Claims 1-3, and 5-20 are pending. Claims 6-7, and 14-15 are withdrawn.

***Response to Arguments***

***Double Patenting***

2. Applicant's submission of a Terminal Disclaimer over U.S. Patent No. 6,372,427 was accepted and is considered sufficient to obviate the Double Patenting Rejection of claims 18-19 set forth in the prior Office Action.

***Claim Rejections - 35 USC § 103***

3. Claims 1-3, 5, 8-13, 16-17 and 20 remain rejected under 35 U.S.C. 103(a) as being unpatentable over Gryaznov et al. (US Patent No. 5,571,903) in view of Weber et al. (1992), for the reasons of record set forth in the prior Office Action.
4. Applicant's arguments filed 11-14-05 have been fully considered but they are not persuasive. Applicants traverse the instant rejection on the grounds that:
  - a. The '903 patent teaches the covalent attachment of a number of "terminal binding moieties" to oligonucleotides, but none of the cited references teach the binding pairs of cyclodextrin/adamantine and biotin/streptavidin binding pairs (see page 8, 3<sup>rd</sup> full paragraph of Applicant's response).
  - b. According to Applicants, the examiner previously acknowledged the criticality of this factor (*assuming Applicants are referring to the terminal covalent attachment limitation of the claims*) in her withdrawal of the rejection under 35 USC 103 over Gryaznov et al. and Agrawal et al. (see page 9, 1<sup>st</sup> full paragraph of Applicant's response).

c. There would have been no motivation to combine the teachings of the '903 patent with the teachings of Weber et al. because there was no reasonable expectation of success to combine the cited references. Moreover according to Applicants there was not indication of a functional equivalency between inherently low affinity, non-specific, non-covalent binding characteristics taught by the '903 patent and the high-affinity, highly specific, non-covalent interaction characteristics of streptavidin and biotin disclosed in Weber et al. Additionally, Applicants argue that there was no indication in the art that either the improved hybridization of the oligonucleotide pairs taught by the '903 patent or the unique binding characteristics of streptavidin and biotin, as taught in Weber et al. would be maintained if the distinct compositions taught by each were combined and appropriately substituted (see page 11 of Applicant's response).

Contrary to Applicant's assertions, (a) the prior rejection over Gryaznov et al. in view of Agrawal et al. in response to applicant's amendment to require the covalent attachment of each binding pair to the oligonucleotides. The disclosure of Agrawal et al. was specifically drawn to wherein only the adamantane group was covalently attached to the oligonucleotide, and specifically required the non-covalent attachment of cyclodextrin.

Contrary to Applicant's assertions, the binding pairs of Weber et al. meet all the characteristics of the terminal binding moieties contemplated by Gryaznov et al. Specifically, Gryaznov et al. teach that the terminal binding pairs must form stable and specific complexes (col. 6, lines 51-54), and Weber et al. teach that streptavidin and

biotin are known to form highly specific complexes with high affinity. Moreover, teach that a variety of binding pairs can be used in combination with their invention, as long as the binding pairs meet the required characteristics. Absent evidence to the contrary, due to the known high affinity shared between streptavidin and biotin, and their ability to form highly specific complexes, it would have been obvious at the time of the instant invention to substitute one functionally equivalent binding pair for another with the expectation that the binding pair of Weber et al. would function in the same manner as those described in Gryaznov et al.

*The examiner disagrees with Applicant's assertion that there was no expectation of success to modify the oligonucleotides of Gryaznov et al. with the binding pairs of Weber et al. Gryaznov et al. taught the modification of oligonucleotides via a covalent linkage with components of a binding pair, the prior art teaches a species of a binding pair that meet the expected characteristics of the prior art contemplated binding pair. Applicants have not provided any objective evidence to support their assertions of no expectation of success, i.e. lack of enablement of the prior art teachings. If a prima facie case of obviousness is established, the burden shifts to the applicant to come forward with arguments and/or evidence to rebut the prima facie case. It is emphasized that the arguments of counsel alone cannot take the place of factually supported objective evidence to obviate a prima facie case of obviousness. See MPEP § 2144.*

***New Grounds of Rejection:***

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

6. Claims 18-19 are rejected under 35 U.S.C. 102(e) as being anticipated by Agrawal et al. (US Patent No. 6,489,464 B1).

Agrawal et al. disclose dimeric oligonucleotide constructs comprising wherein one region of the oligonucleotide comprises a sequence that is complementary to a region of a single stranded viral nucleic acid sequence, and wherein the other region of the oligonucleotide comprises a sequence that is complementary to a tandem non-overlapping region of the viral nucleic acid sequence, wherein the complementary regions are separated by 0-1 base. (See Figure 8, section [C]).

Agrawal et al. is considered to teach each and every aspect of the instant invention.

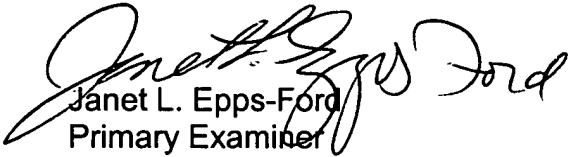
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7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janet L. Epps-Ford whose telephone number is 571-272-0757. The examiner can normally be reached on M-F, 9:30 AM through 6:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave T. Nguyen can be reached on 517-272-0731. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Patent applicants with problems or questions regarding electronic images that can be viewed in the Patent Application Information Retrieval system (PAIR) can now contact the USPTO's Patent Electronic Business Center (Patent EBC) for assistance. Representatives are available to answer your questions daily from 6 am to midnight (EST). The toll free number is (866) 217-9197. When calling please have your application serial or patent number, the type of document you are having an image problem with, the number of pages and the specific nature of the problem. The Patent Electronic Business Center will notify applicants of the resolution of the problem within 5-7 business days. Applicants can also check PAIR to confirm that the problem has been corrected. The USPTO's Patent Electronic Business Center is a complete service center supporting all patent business on the Internet. The USPTO's PAIR system provides Internet-based access to patent application status and history information. It also enables applicants to view the scanned images of their own application file folder(s) as well as general patent information available to the public.

For all other customer support, please call the USPTO Call Center (UCC) at 800-786-9199.

  
Janet L. Epps-Ford  
Primary Examiner  
Art Unit 1633

JLE